

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-13 are currently pending in the application. Claims 1-13 are amended by the present amendment. Support for the amended claims can be found in the original specification, claims and drawings.¹ No new matter is presented.

In the Office Action, Claims 1-13 are rejected under 35 U.S.C. § 112, first and second paragraphs; and Claims 1-13 are rejected under 35 U.S.C. § 103(a) as unpatentable over Tsirtsis et al. (U.S. Pub. 2005/0243766, Tsirtsis) in view of Rajahalme (U.S. Pub. 2004/0107234).

The Office Action rejects Claims 1-13 under 35 U.S.C. § 112, first and second paragraphs, asserting that “the term ‘assigned in common’ is not fully supported by the specification, since it indicates that the address of the transfer devices are the same.” Applicants respectfully traverse this rejection.

Independent Claim 1 recites that “a first transmitter provided at the mobile terminal ... transmit[s] instruction information ... to an anycast address assigned in common with the plurality of transfer devices...” As disclosed in an exemplary embodiment at p. 35, ll. 9-10 of the specification, an “anycast address regarding the plurality of MAPs are ‘2002:10:16:20::1,’” Figs. 11, 13, 15 and 16, and their corresponding description, further disclose that a binding update (BU) packet addressed to the above noted anycast address may be transferred to either the first transfer device (MAP1) or the second transfer device (MAP2) depending on which transfer device is closest to the relevant access router (AR). Thus, the anycast address is considered to be “assigned in common” to each of the transfer devices,

¹ e.g., specification, Figs. 14-15, p. 39, l. 29 – p. 41, l. 12 and p. 49, l. 16 – p. 50, l. 9.

since a packet received at an AR having the anycast address may be sent to any of the transfer devices associated with the address based on their proximity to the AR.

Applicants note that, in addition to being associated with an anycast address, each of the transfer devices are also assigned a unique IP address, which is different from the anycast address and uniquely identifies each of the transfer devices. As disclosed in Figs. 11, 13, 15 and 16, for example, each of the transfer devices are associated both with an anycast address and a Regional Care-of Address (RCoA). The anycast is “assigned in common” to a plurality of transfer devices, while each of the transfer devices also include a RCoA used to uniquely identify each of the transfer devices. Thus, the use of the phrase “an anycast address assigned in common with the plurality of transfer devices” clearly describes the use of an anycast address in identifying a transfer device, as disclosed in the above noted portions of the specification.

Accordingly, Applicant respectfully requests that the rejection of Claims 1-13 under 35 U.S.C. § 112, first and second paragraphs, be withdrawn.

The Office Action rejected Claims 1-13 under 35 U.S.C. § 103(a) as unpatentable over Tsirtsis in view of Rajahalme. In response to this rejection, Applicants respectfully submit that amended independent Claims 1 and 3 recite novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 1, for example, is directed to a communication system including a plurality of transfer devices (e.g. MAP 20) for transferring packets to a current location of a mobile terminal (e.g., MN 10), a plurality of access router devices (e.g. AR 50) arranged in a network to be able to connect to the mobile terminal, a plurality of routers (e.g. routers 1-5) connecting the access router device and each of the plurality of transfer devices, and the mobile terminal connected to the access router device to receive the packets from a

first of the plurality of a transfer devices through the access router device. Amended independent Claim 1 further recites

...when the mobile terminal executes a handoff from the first access router to a second access router, and an on-link care of address used by the mobile terminal is changed from a first on-link care of address to a second on-link care of address based on the handoff, ***the mobile terminal performs unicast transmission to transmit instruction information that includes the second on-link care of address to be used by the mobile terminal after the handoff to the nearest transfer device having a shortest distance from the first access router to which the mobile terminal was connected prior to the handoff.***

Independent Claim 3, while directed to an alternative embodiment, is amended to recite similar features. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 1 and 3.

As described in an exemplary embodiment at Figs. 14-15, p. 39, l. 29 – p. 41, l. 12 and p. 49, l. 16 – p. 50, l. 9 of the specification, when the nearest transfer device is switched from MAP1 to MAP2 due to a handoff of access routers, the new nearest transfer device (MAP2) is notified of the second on-link care-of address to be used by the mobile terminal after handoff by way of an instruction sent from the mobile terminal using the anycast address. However, since MAP1, which was used as the nearest transfer device before the handoff no longer receives the instruction sent using the anycast address (e.g. MAP1 is no longer the closest transfer device to the new access router due to handoff), the previous transfer device (MAP1) is unable to obtain information regarding the new (e.g. second) on-link care-of address to be used by the mobile terminal after handoff. Therefore, MAP1 is unable to transfer a packet received just prior to completion of a handoff procedure to the mobile terminal resulting in packet loss.

The configuration recited in amended Claims 1 and 3, however, assists in preventing this packet loss during handoff. More particularly, by way of unicast transmission, the mobile terminal notifies the previously used transfer device (MAP1) of the second (e.g.

newer) on-link care-of address to be used by the mobile terminal after handoff. Accordingly, when notified of the second (e.g. new) on-link care-of address, the old transfer device (e.g. MAP1) can transfer received packets to the mobile terminal via the connection with the new (e.g. second) access router after the handoff, thereby preventing loss of packets transmitted during, and shortly after, the handoff.

Turning to the applied primary reference, Tsirtsis describes a method and apparatus used to support session signaling and mobility management in a network including a plurality of end nodes that interact via one or more access nodes.²

Tsirtsis, however, fails to teach or suggest a mobile terminal that executes a handoff from a first access router to a second access router, resulting in a change of an on-link care-of address from a first address to a second address, wherein “***the mobile terminal performs unicast transmission to transmit*** instruction information that includes ***the second on-link care of address*** to be used by the mobile terminal after the handoff to the nearest transfer device having a shortest distance ***from the first access router to which the mobile terminal was connected prior to the handoff,***” as recited in amended independent Claims 1 and 3.

In contrast, Tsirtsis describes that a single paging and location server (PLS) 1300 is used in a visited domain to handle connections from visiting mobile nodes, the PLS 1300 forwards a signaling transmitted to an end node 1002 in accordance with a session signaling address of the end node 1002.³ Thus, each time the mobile node moves from base station to base station in the visited domain, the mobile node must only update its address with the single paging and location server 1300 and need not find a new “transfer device” which might more easily serve the roaming mobile node.

Tsirtsis, therefore, merely describes that the mobile node updates its address with the paging and location server, and fails to teach or suggest that the mobile node unicasts a new

² Tsirtsis, paragraph [0026].

³ Tsirtsis, Fig. 1 and paragraphs [0034-0035].

on-link care-of address to a transfer device having a shortest distance *from the first access router to which the mobile terminal was connected prior to the handoff*, as recited in amended independent Claims 1 and 3.

Further, Rajahalme, the secondary reference, describes an addressing method and system for using an anycast address, but fails to remedy the above-noted deficiencies of Tsirtsis.

Therefore, Tsirtsis and Rajahalme, neither alone, nor in combination, teach or suggest the above-differentiated features as recited in amended independent Claims 1 and 3.

Accordingly, Applicants respectfully request that the rejections of these claims (and the claims that depend therefrom) under 35 U.S.C. §103 be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-13 is definite and patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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